PORTLAND HARBOR

Evaluation of alternatives

Congressional Briefing

November 25, 2015

Region 10

Overview

- NRRB/CSTAG Meeting Overview
- Highlights from the Remedial Investigation
- Highlights from the Feasibility Study
- Option Presented to NRRB/CSTAG
- Focused Request to NRRB/CSTAG for input
- Summary of Comments from State and Tribes
- Decision Tree
- Cost Estimates
- Allocation
- Public Process and Schedule

NRRB/CSTAG Meeting Overview

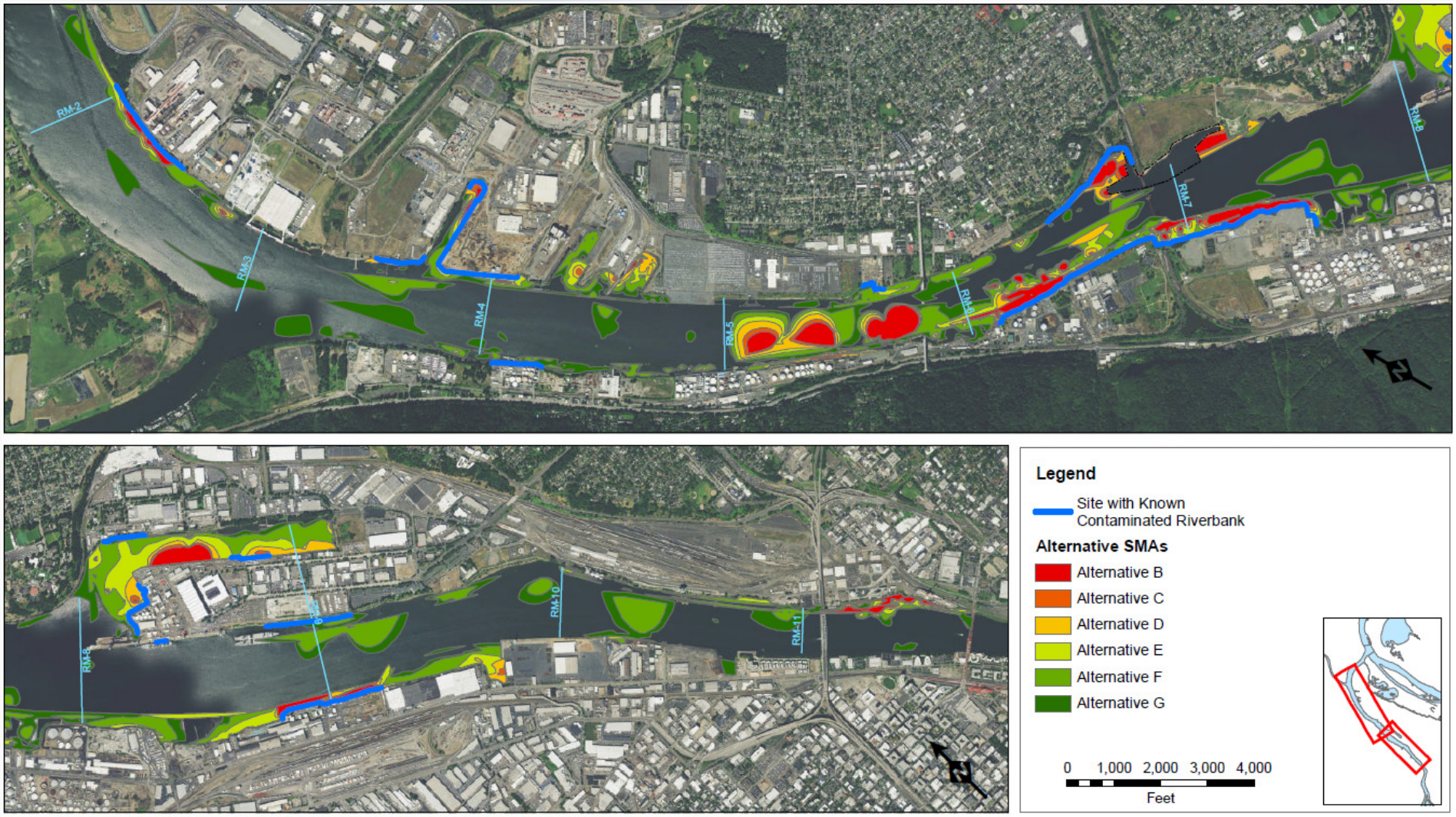
- NRRB and CSTAG received comments from:
  - the State of Oregon
  - the Lower Willamette Group
  - the Community Advisory Group
  - Yakama, Grand Ronde, Siletz, Warm Springs, Umatilla, Nez Perce Tribes
- EPA Presentation
  - Summary of the Remedial Investigation/Feasibility Study
  - Overview and rationale of alternatives, preliminary preferred alternative and the recommended option
- Questions for the Boards
- State Presentation
- Tribal Presentations

Remedial Investigation Highlights

- Multiple contaminants impact Portland Harbor
- Most significant and pervasive contaminants are:
  - PCBs
  - PAHs
  - DDT, DDE and DDD
- Pure product located in the river in multiple places
- Greatest risk to people who consume resident fish and shellfish from the site, although there are risks to people and wildlife from direct contact with sediment.

Feasibility Study Highlights

- Objectives of the Cleanup:
  - Protect people and wildlife from direct contact with sediment
  - Protect people and wildlife from eating contaminated fish
  - Reduce the concentrations of contaminants in sediment and fish tissue
  - Protect people and wildlife from contaminated surface water and reduce contaminated groundwater migration
- Excavation and treatment of Principal Threat Waste that cannot be reliably contained in the river
- Cleanup Technologies:
  - Capping, Dredging/Excavation, Enhanced Monitored Natural Recovery, Monitored Natural Recovery



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FS5

Team's Preliminary Preferred Alternative

- Region needs to present an alternative/option to the NRRB/CSTAG
- After evaluation, alternative E has the best balance of tradeoffs
- Addresses the majority of PTW
- None of the alternatives reduced risk uniformly throughout the river but E has best balance of contaminant/risk reduction versus constructed acres than other alternatives
- The RALs (PCB and PAH) are similar to Lower Duwamish

Slide 7

FS5 Need a few more items to support E.
Fonseca, Silvina, 11/22/2015

Alternative E from Feasibility Study

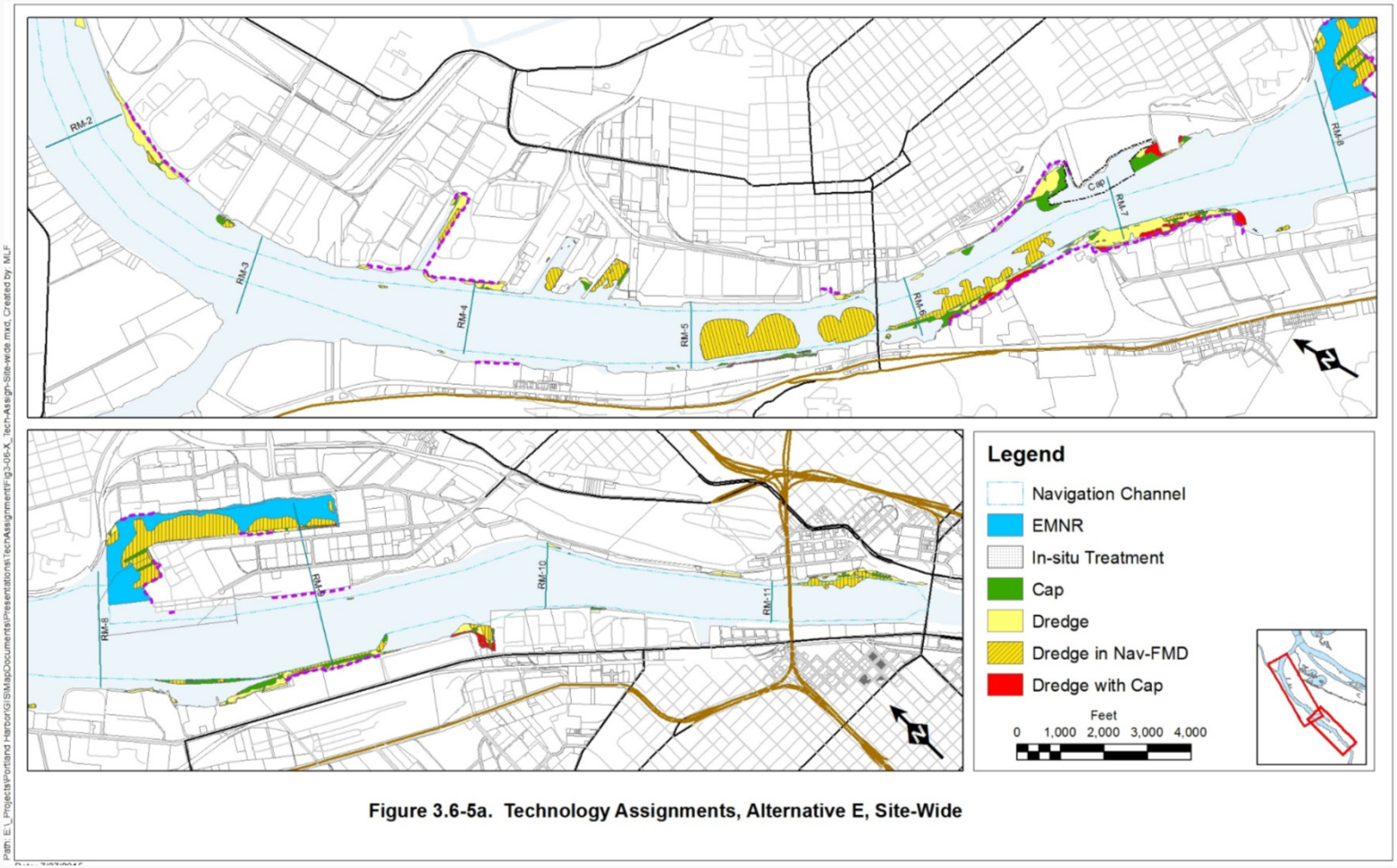
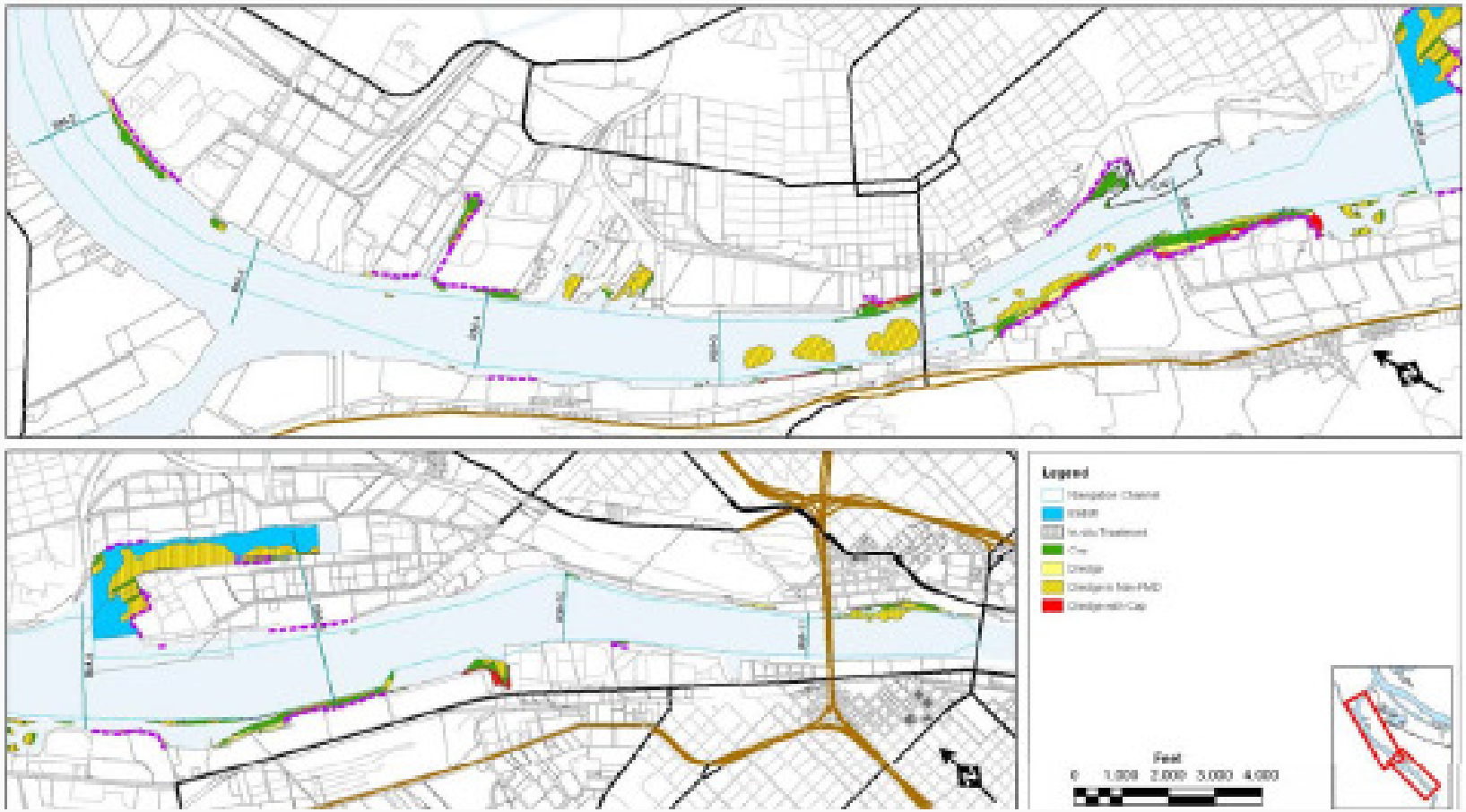


Figure 3.6-5a. Technology Assignments, Alternative E, Site-Wide

Option Presented to the Boards

- For the following 5 of 13 hotspots, Alternative E is modified accordingly:
  - River mile 5.5 East—Alternative F
  - River mile 6.5 East—Alternative B + PTW
  - River mile 6 Nav—Alternative B + PTW
  - River mile 6 West—Alternative D
  - River mile 7 West—Alternative F
- Based on current assumptions, cost estimate is $1.4 billion and take 7 years to complete (costs being further refined)

Option Presented to the Boards



Rationale for Option Presented to the Boards

- Achieves similar risk reduction throughout the river
  - some areas receive more cleanup and some areas receive less
- Relies on natural recovery for most of the river cleanup
- Addresses PTW outside the hotspot areas
- Considered river restrictions due to caps and current or anticipated land/river use
- Considered ecological risks

Questions for the Board

- Thoughts on achieving same risk reduction throughout 13 hotspots at end of construction
- Use of a model for the site
- Thoughts on the model used by LWG
- Cost assumptions
  - Unit costs for dredging
  - Disposal costs
  - Mitigation costs
  - Unit costs for other work components

Summary of State and Tribal Comments

Oregon:

- Concerned about schedule—believe it's time to make a decision
- Believe their source control work will enable EPA cleanup to move forward
- Looking for opportunities to reduce costs
- Want less restrictions in the river/less reliance on fish advisories

Tribes:

- Want a remedy that achieves cleanup goals at the end of construction—suggest an alternative that goes beyond the most aggressive option—Alternative G+.
- Yakama care deeply about contaminant impacts to the Columbia.

Decision Tree Analysis

- Decision tree decisions based on several criteria, such as:
  - Location in the river: nearshore, intermediate zone or navigation channel?
  - Do concentrations exceed the RALs?
  - Is it PTW and outside of the hotspot areas? Can it be reliably contained?
  - Depth of contamination?
- Decision tree decisions will be based on design data enabling current conditions to dictate cleanup

Decision Tree Analysis

- Based on the decision tree, the sediment is either capped, dredged, treated in place or left to recover.
- Capping may include armoring or a reactive layer depending on the physical conditions of the area.
- Depending on depth of contamination, dredging may only accommodate a cap or remove contamination

Costs

- When this site's costs are compared to other large sediment site costs, these costs appear overestimated.
- Asked the NRRB/CSTAG to look at our costs
- The LWG has asked that costs be broken down by Sediment Decision Unit for their allocation process.
- EPA is working with the LWG in refining and making our cost estimates more clear.

Allocation

- Currently, there are about 80 (?) parties participating in an independent allocation process
- EPA is not part of the allocation process
- EPA is very interested in the success of an allocation process.

Community Involvement Goals

General goal: To inform the community and collaborate with stakeholders on how we successfully engage the public.

Specific goals for engaging communities until the release of the proposed plan:

- Explain the health/environmental risk, why EPA is taking action, and discuss cleanup options outlined in the Feasibility Study.
- Enhance engagement with underrepresented communities.
- Keep the community abreast of ongoing/planned activities and provide regular opportunities to engage with EPA leadership (R10 RA/OSWER).
- Listen carefully to community concerns early and change planned agency actions where community input/concerns have merit.
- Offer forums on the proposed plan and how to submit formal public comments.

Community Involvement Activities

Pre-Proposed Plan Winter 2015-March 2016	***Proposed Plan Release*** *March - May 2016*	***Post Proposed Plan*** *June-December 2016*
Portland Harbor/Superfund 101 training sessions	Public Notice of Proposed Plan and notification of availability	Compile comments
Community Café: community networking, discussions of shared values and considerations for cleanup.	City wide proposed plan information sessions	Prepare responses to comments
Technology talks: community discussions on technologies evaluated in FS to reduce risk.	60 Day formal public comment period	Responsiveness summary – publically available and part of administrative record
Activities and presentations on health risks to minority, immigrant and Native American students who may subsistence fish from the river.	Public comment sessions	
Information sessions with groups representing minority, immigrant, and houseless communities to discuss updates, EJ expectations and future job opportunities.	Fact sheet available to pubic-multilingual	
Information sessions on public comment period process.		
Continued update briefings during the Oregon EJ Task Force meetings.		